

REMARKS

The Examiner is thanked for the thorough review and consideration of the present application. The non-final Action dated April 23, 2003 has been received and its content carefully reviewed.

By this Response, claims 4, 9, 14, 17, 20-24, 29 and 35 have been amended. New claims 39 and 40 have been added to provide additional coverage of the subject matter disclosed in the originally filed specification. No new matter has been added. Claims 2-40 are pending in the application. Reconsideration based upon the above amendments and the following remarks is requested.

Claim 14 is objected to in the Office Action because of informalities. Applicant has amended claim 14 to correct the informality. Withdrawal of the objection is requested.

Claims 2, 4, 5, 7, 10-12, 17-18 and 33 are rejected under 35 U.S. C. §103(a) as being unpatentable over Applicant's Related Art ("Related Art") in view of U.S. Patent No. 6,362,858, issued to Jeon et al. (hereafter "Jeon"). Claims 13-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Related Art in view of Jeon, and further in view of U.S. Patent No. 6,323,918, issued to Yoshioka et al. (hereafter "Yoshioka"). Claims 3, 6 and 34 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Related Art in view of Jeon, and further in view of U.S. Patent No. 6,278,502, issued to Colgan et al. (hereafter "Colgan"). Claims 8, 9 and 32 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Related Art in view of Jeon, and further in view of U.S. Patent Publication No. 2002/0008824 A1, issued to Son et al. (hereafter "Son"). Claims 19, 23-25 and 27-30 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Related Art in view of Jeon, and further in view of U.S. Patent No. 6,219,125, issued to Ishikura et al. (hereafter "Ishikura"). Claim 26 is rejected under 35 U.S.C. §103(a) as being unpatentable over the Related Art in view of Jeon and Colgan, and further in view of U.S. Patent No. 6,094,250, issued to Choi et al. (hereafter "Choi"). Claim 31 is rejected under 35 U.S.C. §103(a) as being unpatentable over the Related Art in view of Jeon and Ishikura and further in view of Colgan. Claims 20-22 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Related Art in view of Jeon and further in view of Choi.

At the outset, Applicant makes no admittance to prior art. Figures 7A, 7B and 8, which have been identified as "admitted prior art" by the Examiner, have been used by the Applicant to

provide related art descriptions. Applicant respectfully traverses the rejections because the Related Art, Jeon, Yoshioka, Colgan, Son, Ishikura and Choi, analyzed alone or in any combination, fail to teach or suggest the combined features recited in the claims of the present application. In particular, the Related Art, Jeon, Yoshioka, Colgan, Son, Ishikura, Choi, Shin and Nakashima fail to teach or suggest an in-plane switching liquid crystal device having, among other features:

“a plurality of pixel electrodes and a plurality of common electrodes on the first substrate, the pixel and common electrodes being formed of a transparent conductive material; and... wherein the common electrodes alternate with and are parallel to the pixel electrodes”, as recited in rejected independent claims 4; and

“a plurality of common electrodes; ... a plurality of pixel electrodes contacting the drain electrode of the thin film transistor, wherein the common electrodes alternate with and are parallel to the pixel electrodes”, as recited in rejected independent claim 17.

Jeon discloses a single, counter electrode 31 that is “exposed in the shape of a plate” (col. 3, lines 1-2) and “the pixel electrode 37 is overlapped with the counter electrode 31” (col. 3, lines 22-23). As such, Jeon fails to meet the requirements recited in claims 4 and 17 of the present application. Thus, claims 4 and 17 are patentable over any combination of Jeon and the Related Art.

Yoshioka discloses a liquid crystal display device having a structure of a multi-gate thin film transistor, but fails to teach or suggest any features related to in-plane switching liquid crystal display devices as recited in claims 4 and 17. Colgan merely discloses capacitors for pixel display circuits, but, like Yoshioka, fails to teach or suggest features related to in-plane switching liquid crystal display devices as recited in independent claim 4 and 17. Thus, Yoshioka and Colgan fail to provide motivation to one of ordinary skill in the art to modify the teachings of Jeon and the Related Art to provide an in-plane switching liquid crystal display device having all the combined features recited in the claims 4 and 17.

Son discloses an in-plane switching mode liquid crystal display device capable of shielding against interferences. Ishikura discloses an electrode plate provided with a specific metal electrode and a transparent electrode formed thereon. Choi discloses an IPS mode thin film transistor-LCD in which cross-talk is decreased by preventing the electric signal through a data electrode from affecting a pixel electrode. Applicant respectfully submits neither Son,

Ishikura, nor Choi teach or suggest an in-plane switching liquid crystal display device having all the combined features recited in independent claims 4 and 17. As such, claims 4 and 17 are patentable over the applied references of Son, Ishikura and Choi.

Rejected claims 2, 3, and 5-15 depend from independent claim 4. Rejected claims 18-34 depend from independent claim 17. By virtue of their dependence from claims 4 and 17, claims 2, 3, 5-15, and 18-34 are also allowable over any combination of Jeon, Yoshioka, Colgan, Son, Ishikura, Choi and the Related Art. Reconsideration and withdrawal of the rejection of claims 2, 4, 5-9, 10-15, 17-34 are requested.

Additionally, claims 35 and 38 are rejected under 35 U.S.C. §103(a) as being unpatentable over APA in view of Jeon, Yoshioka and U.S. Patent No. 6,356,328, issued to Shin et al. (hereafter "Shin"). Claims 16, 36 and 37 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Related Art, Jeon, Yoshioka, Shin, and further in view of U.S. Patent No. 6,049,365, issued to Nakashima. Applicant traverses the rejection because the Related Art, Jeon, Yoshioka, Shin and Nakashima fail to teach or suggest:

"a plurality of common electrodes formed of a transparent conductive material on the first substrate;... a plurality of pixel electrodes formed of an opaque metal contacting the drain electrode of the thin film transistor, wherein the common electrodes alternate with and are parallel to the pixel electrodes", as recited in independent claim 35.

Shin discloses an IPS-LCD having pixel electrodes made of an opaque metal in order to block light; however, an aim of the Shin invention is to improve aperture ratio, transmittance and brightness of IPS-LCD devices. These features were achieved in the Shin device by having a counter electrode and pixel electrode made of transparent material. Thus, Shin teaches against the use of an opaque material to form the pixel electrode (See, for example, claims 1 and 15). Accordingly, Shin fails to meet the requirements of claim 35 of the present application.

Nakashima discloses various embodiments of a liquid crystal display device including an in-plane switching mode liquid crystal display device. However, Nakashima fails to teach or suggest the combined features recited in the present invention, and further fails to provide motivation to one of ordinary skill in the art to modify a hypothetical combination of the Related Art, Jeon and Shin to obtain a device having the combined features recited in independent claim 35. As such, claim 35 and its dependent claims 36-38, as well as dependent claim 16 which is dependent from independent claim 4 distinguished above, are patentable over the Related Art,

Application No.: 09/737,770
Amdt. dated July 23, 2003
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Jeon, Shin and Nakashima. Reconsideration and withdrawal of the rejection of claims 16 and 35-38 are requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding objection and rejections of the claims and pass this application to issue.

Dated: July 23, 2003

Respectfully submitted,

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